

CLAIMS

What is claimed is:

1. An endoscopic catheter adapted for insertion into body cavities, comprising:

a distal catheter portion;

an illumination device for illuminating an area around the distal catheter portion with electromagnetic radiation;

an image recording unit for recording an image of the electromagnetic radiation reflected by the area around the distal catheter portion and pass it to a proximal end of the catheter;

an image reproduction unit, connected to the proximal end of the catheter and adapted to reproduce an image of the recorded electromagnetic radiation,

wherein the catheter is adapted controllably for insertion into blood vessels, in particular blood vessels, and for reproducing the electromagnetic radiation image reflected by the area around the distal catheter portion, with a wavelength for which blood has a high transparency.

2. The catheter of claim 1, wherein the catheter reproduces an image recorded in a wavelength range of between 600 and 650 nanometers.

3. The catheter of claim 2, wherein the illumination device illuminates the area around the distal catheter portion with infra-red light of a wavelength of between 600 and 650 nanometers.

4. The catheter of claim 3, wherein the illumination device further comprises an optical band pass filter for a frequency band of between 600 and 650 nanometers.

5. The catheter of claim 4, wherein the illumination device further comprises an illumination light waveguide from the proximal to a distal catheter end, to pass electromagnetic radiation serving for illumination purposes from the proximal catheter end to the distal catheter end.

6. The catheter of claim 1, wherein the illumination device further comprises an illumination light waveguide from the proximal to a distal catheter end, to pass electromagnetic radiation serving for illumination purposes from the proximal catheter end to the distal catheter end.

7. The catheter of claim 2, wherein the illumination device further comprises an illumination light waveguide from the proximal to a distal catheter end, to pass electromagnetic radiation serving for illumination purposes from the proximal catheter end to the distal catheter end.

8. The catheter of claim 3, wherein the illumination device further comprises an illumination light waveguide from the proximal to a distal catheter end, to pass electromagnetic radiation serving for illumination purposes from the proximal catheter end to the distal catheter end.

9. The catheter of claim 5, wherein the catheter is in the form of an electrode line and for that purpose is provided at its distal catheter portion with at least one electrode for delivering and/or picking up electrical signals to or from body tissue adjoining the distal catheter portion.

10. The catheter of claim 1, wherein the catheter is in the form of an electrode line and for that purpose is provided at its distal catheter portion with at least one electrode for delivering and/or picking up electrical signals to or from body tissue adjoining the distal catheter portion.

11. The catheter of claim 2, wherein the catheter is in the form of an electrode line and for that purpose is provided at its distal catheter portion with at least one electrode for delivering and/or picking up electrical signals to or from body tissue adjoining the distal catheter portion.

12. The catheter of claim 3, wherein the catheter is in the form of an electrode line and for that purpose is provided at its distal catheter portion with at least one electrode for delivering and/or picking up electrical signals to or from body tissue adjoining the distal catheter portion.

13. The catheter of claim 4, wherein the catheter is in the form of an electrode line and for that purpose is provided at its distal catheter portion with at least one electrode for delivering and/or picking up electrical signals to or from body tissue adjoining the distal catheter portion.

14. The catheter of claim 6, wherein the catheter is in the form of an electrode line and for that purpose is provided at its distal catheter portion with at least one electrode for delivering and/or picking up electrical signals to or from body tissue adjoining the distal catheter portion.

15. The catheter of claim 7, wherein the catheter is in the form of an electrode line and for that purpose is provided at its distal catheter portion with at least one electrode for delivering and/or picking up electrical signals to or from body tissue adjoining the distal catheter portion.

16. The catheter of claim 8, wherein the catheter is in the form of an electrode line and for that purpose is provided at its distal catheter portion with at least one electrode for delivering and/or picking up electrical signals to or from body tissue adjoining the distal catheter portion.

17. The catheter of claim 9, wherein the catheter carries an expandable balloon at its distal catheter portion.

18. The catheter of claim 1, wherein the catheter carries an expandable balloon at its distal catheter portion.

19. The catheter of claim 2, wherein the catheter carries an expandable balloon at its distal catheter portion.

20. The catheter of claim 3, wherein the catheter carries an expandable balloon at its distal catheter portion.

21. The catheter of claim 4, wherein the catheter carries an expandable balloon at its distal catheter portion.

22. The catheter of claim 14, wherein the catheter carries an expandable balloon at its distal catheter portion.

23. The catheter of claim 15, wherein the catheter carries an expandable balloon at its distal catheter portion.

24. The catheter of claim 16, wherein the catheter carries an expandable balloon at its distal catheter portion.

25. The catheter of claim 17, wherein the expandable balloon is suitably adapted for dilation of constricted blood vessels.

26. The catheter of claim 18, wherein the expandable balloon is suitably adapted for dilation of constricted blood vessels.

27. The catheter of claim 19, wherein the expandable balloon is suitably adapted for dilation of constricted blood vessels.

28. The catheter of claim 20, wherein the expandable balloon is suitably adapted for dilation of constricted blood vessels.

29. The catheter of claim 21, wherein the expandable balloon is suitably adapted for dilation of constricted blood vessels.

30. The catheter of claim 22, wherein the expandable balloon is suitably adapted for dilation of constricted blood vessels.

31. The catheter of claim 23, wherein the expandable balloon is suitably adapted for dilation of constricted blood vessels.

32. The catheter of claim 24, wherein the expandable balloon is suitably adapted for dilation of constricted blood vessels.

33. The catheter of claim 25, wherein the balloon is suitably adapted for inserting and expanding stents.

34. The catheter of claim 26, wherein the balloon is suitably adapted for inserting and expanding stents.

35. The catheter of claim 27, wherein the balloon is suitably adapted for inserting and expanding stents.

36. The catheter of claim 28, wherein the balloon is suitably adapted for inserting and expanding stents.

37. The catheter of claim 29, wherein the balloon is suitably adapted for inserting and expanding stents.

38. The catheter of claim 30, wherein the balloon is suitably adapted for inserting and expanding stents.

39. The catheter of claim 31, wherein the balloon is suitably adapted for inserting and expanding stents.

40. The catheter of claim 32, wherein the balloon is suitably adapted for inserting and expanding stents.

41. The catheter of claim 33, wherein the catheter further comprises means for controlling a targeted deflection of the distal end of the catheter, actuatable from the proximal end thereof.

42. The catheter of claim 1, wherein the catheter further comprises means for controlling a targeted deflection of the distal end of the catheter, actuatable from the proximal end thereof.

43. The catheter of claim 2, wherein the catheter further comprises means for controlling a targeted deflection of the distal end of the catheter, actuatable from the proximal end thereof.

44. The catheter of claim 3, wherein the catheter further comprises means for controlling a targeted deflection of the distal end of the catheter, actuatable from the proximal end thereof.

45. The catheter of claim 4, wherein the catheter further comprises means for controlling a targeted deflection of the distal end of the catheter, actuatable from the proximal end thereof.

46. The catheter of claim 5, wherein the catheter further comprises means for controlling a targeted deflection of the distal end of the catheter, actuatable from the proximal end thereof.